



Third West Weekly Report Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)' 01/18/2012 10:53 AM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbamitz@utah.gov)'" <cbamitz@utah.gov>

7 Attachments











Weekly Report 01-09 to 01-12-12.pdf Third West Weekly Log 2012-02.pdf 227464-1.pdf 227548-1.pdf 227613-1.pdf

POS

POF

227675-1.pdf 227791-1.pdf

Joyce & Craig,

Attached are the reports for the week of January 9, 2012.

All air monitoring results came back negative, except the two positive hits of chrysotile on Tuesday last week.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
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3rd West Substation Remediation Project HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	01/09/11
<u>General</u>	
$oldsymbol{ olimits}$	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Comp NA NA NA NA NA	Delete all CSHASP Forms (for applicable activities planned for that day) Illness/Injury Report Form A Site-Specific Training Record Form C Hot Work Permit Form D Trench/Evacuation Permit Form E Combined Space Entry Permit From F Exclusion zone operations are practiced as instructed. ✓ Decontamination unit is working properly.
	 ✓ Workers are using decontamination unit as instructed. Workers use personal protective equipment properly.
☑	Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation. Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
<u>Samplin</u>	g
NA ☑	Soil Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA .	Digitally photograph each sample location and at any place field sampling personnel determined necessary





☑		Electronically file photo files into the on-site database
☑		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	NA	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
V		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 01/09/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х .	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

Standard	Title	In Compliance	Out of Compliance	O N/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	,
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			х	
1926.651 (k)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.	,		х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	31		x	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	+
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	х			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х		ă	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х	1		
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	x			
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone active all day.

HAZWOPER class for 5 Newman workers commenced at 8:00. Continued through 16:00

3 trucks that loaded and exited yard before lunch were not washed out due to water truck not working.

2 trucks that loaded and exited yard after lunch had wheels washed by Newman workers using buckets. It appeared that the water truck didn't work all day.

CVE worked on the switch gear building foundation and poured concrete for the west third of the walls. At approximately 16:30 a Newman worker and unidentified individual were seen salvaging scrap metal in the exclusion zone from the old control building and loading it into a personal pickup. R&R summoned the Newman employee to the east gate area and instructed him to remove both himself and the individual salvaging with him from the EZ immediately. The unidentified individual was not wearing a respirator and had not been trained for entry into the exclusion zone.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

		<u>BINDI CIBCIDIOI</u>
DATE	E : _	01/10/11
G	<u>eneral</u>	
<u> </u>		Work area Health and Safety Inspection
N.		Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
- 11	. =	activities for the day
N.	A	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
		to commencement of any site work. Instruction, review hazards, health & safety issues
		and any modifications to the CSHASP
N.	A	Site hazard and safety instruction for all first time employees, contractors or visitors
N.	A	Complete Employee Meeting Record Form B (where applicable)
N.	A	Document required Respirator Training completion with Form H
NA		Record times and numbers of dump trucks and trailers as they leave the site with
		contaminated material.
NA		Confirm return of waste material manifest documents for each load with site
•		manager.
NA	-	lete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
	$ \overline{\mathbf{A}} $	Exclusion zone operations are practiced as instructed. Decontamination unit is working properly.
		☑ Decontamination unit is working properly.☑ Workers are using decontamination unit as instructed.
		Workers are using decontamination unit as instructed. Workers use personal protective equipment properly.
		workers use personal protective equipment property.
. 4	ſ	Set air samples at cardinal compass points around exclusion zone. Check
_		throughout the day to ensure proper operation.
		Observe control measures for dust and fligitive materials i.e. watering excavation
		sites and track out prevention.
\checkmark	ſ	Review sign-in/sign-out log throughout and at the end of the workday.
☑	ſ	Secure the site at the end of the workday
Ç.		
<u>38</u>	ampling	
NA		Soil Confirmation sampling for any newly excavated areas
$\overline{\mathbf{A}}$		Stationary Air Monitoring during contaminated soil removal around the perimeter of the
		exclusion zone
N	A	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
		removal
N	A	Digitally photograph each sample location and at any place field sampling personnel
		determined necessary





		Electronically file photo files into the on-site database
		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	NA	On-site computer database
\square		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Ø		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
◩		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>01/10/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.	313		х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	In Compliance	Out of Compliance	D/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	*
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x ,	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х	9		
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	٠
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	2
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	,
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			0
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
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1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	х			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			· •
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	x			
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new			х	
(2)	one is prepared.		V		

Exclusion zone active all day.

HAZWOPER class for 5 Newman workers continued.

End dump truck washed out before lunch.

Side dump truck washed out after lunch.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	01/11/11
<u>General</u>	
NA	Work area Health and Safety Inspection
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NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
NA Comp NA NA NA NA NA ☑	manager. blete all CSHASP Forms (for applicable activities planned for that day) Illness/Injury Report Form A Site-Specific Training Record Form C Hot Work Permit Form D Trench/Evacuation Permit Form E Combined Space Entry Permit From F Exclusion zone operations are practiced as instructed. □ Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
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☑ ☑	Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
<u>Samplin</u>	g
NA ☑	Soil Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





	Electronically file photo files into the on-site database
	Complete Field Documentation
\square	Field Sample Data Sheets (FSDS)
	Logbook
NA	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
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	Electronically file sample reports into on-site database
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Project: 3rd West Sub Station	Date: 01/11/12
Location:3rd West, 1st South, SLC	Job Number:
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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.	×		х	4
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x	as		
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
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Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
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1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
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1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
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1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.	E .	106	х	
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1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	×		x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
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Exclusion zone active all day.

HAZWOPER class for 5 Newman workers continued.

3 trucks washed out before lunch.

3 trucks washed out after lunch.

Newman demolished the 4 kV section of the old control building (north section).





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

		<u>DAILY CHECKLIST</u>
DATE	:	01/12/12
Ge ☑ NA NA NA	neral	Work area Health and Safety Inspection Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP Site hazard and safety instruction for all first time employees, contractors or visitors Complete Employee Meeting Record Form B (where applicable
NA NA		Document required Respirator Training completion with Form H Record times and numbers of dump trucks and trailers as they leave the site with
NA NA		contaminated material. Confirm return of waste material manifest documents for each load with site manager. ete all CSHASP Forms (for applicable activities planned for that day) Illness/Injury Report Form A Site-Specific Training Record Form C Hot Work Permit Form D Trench/Evacuation Permit Form E Combined Space Entry Permit From F Exclusion zone operations are practiced as instructed. Decontamination unit is working properly. Workers are using decontamination unit as instructed. Workers use personal protective equipment properly.
☑		Set air samples at cardinal compass points around exclusion zone. Check
V		throughout the day to ensure proper operation. Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention. Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
<u>Sa</u>	mpling	
NA ☑ NA		Soil Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal Digitally photograph each sample location and at any place field sampling personnel determined necessary
☑		Electronically file photo files into the on-site database





✓	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
NA	On-site computer database
$\overline{\square}$	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
☑	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
NA	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 01/12/12		
Location:3rd West, 1st South, SLC	Job Number:		
Survey Conducted By: Justin Kargis	Title:		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			x	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.		01	х	y
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	¥
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	,
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			х	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			x	
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			х	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			х	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			x	
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.		q	х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

HAZWOPER class for Newman workers concluded with all attendees passing the test.

Newman removed some more scrap metal from the exclusion zone through the east gate.





3RD WEST SUBSTATION REMEDIATION PROJECT **HEALTH SAFETY MANAGER (HSM)**

	<u>DAILY CHECKLIST</u>
DATE:	01/11/11
General NA	Work area Health and Safety Inspection Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP Site hazard and safety instruction for all first time employees, contractors or visitors Complete Employee Meeting Record Form B (where applicable) Document required Respirator Training completion with Form H Record times and numbers of dump trucks and trailers as they leave the site with contaminated material. Confirm return of waste material manifest documents for each load with site manager. Itele all CSHASP Forms (for applicable activities planned for that day) Illness/Injury Report Form A Site-Specific Training Record Form C Hot Work Permit Form D Trench/Evacuation Permit Form E Combined Space Entry Permit From F Exclusion zone operations are practiced as instructed. Decontamination unit is working properly. Workers are using decontamination unit as instructed.
<u> </u>	Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation. Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention. Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
Sampling	
NA ☑	Soil Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
. NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





		Electronically file photo files into the on-site database
		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	NA	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
☑		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>01/13/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			x	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x		¥	

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and
Stanaara					Dute
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.	=		X	,
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.		ž	х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.		ė	х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	N.
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			х	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	· ·
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			x	
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			х	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			х	,
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			х	
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	į.		х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	× .

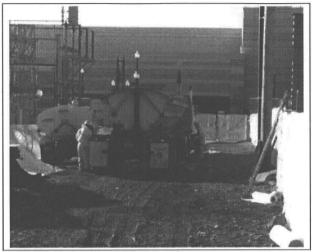
Three Miller trucks and two Newman trucks washed out before 14:00

During excavation in the EZ near the east gate, soil with a high concentration of vermiculite was uncovered between two concrete walls. A Newman worker collected a small amount of this soil and placed it in a plastic baggie. The sample was then sealed in a larger plastic bag and retained in the construction trailer.

Throughout this week (1/9-1/13) adherence to exclusion zone procedures and policies was quite relaxed in several instances for Newman workers. Examples include an unauthorized individual associated with a Newman employee entering the exclusion zone, improper use of PPE (frequent removal of respirators to speak), not being able to wash dump trucks when exiting and potentially carrying contamination from the yard. R&R approached the Newman supervisor on 1/13 to encourage more thorough observance of EZ protocols. R&R will follow up on this in the coming week to further promote improvement of these operations.



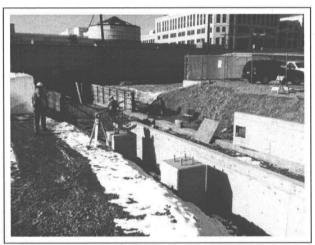
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:

DCR

DRAWN BY:

DATE

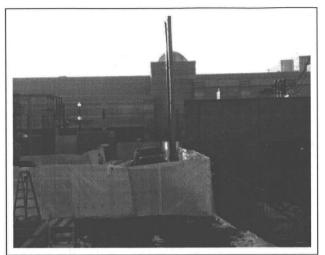
JMK

DATE

01/09/12

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



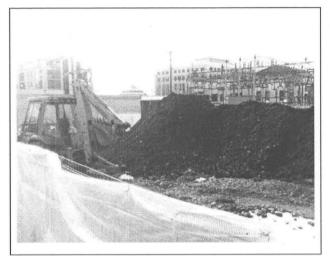
РНОТО 3

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 01/09/12b	FILE:	

SITE PHOTOGRAPHS

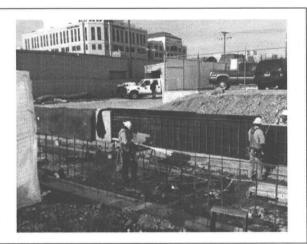




РНОТО 1



РНОТО 2



РНОТО 3

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY:	
DRAWN BY: JMK	DATE 01/10/12	FILE:	

SITE PHOTOGRAPHS

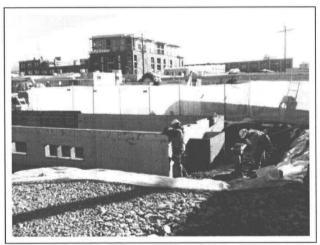




РНОТО 1



РНОТО 2



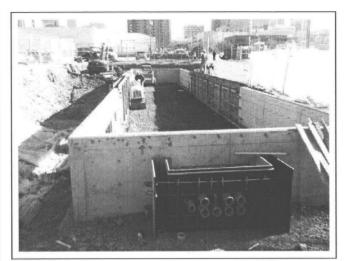
РНОТО 3

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 01/11/12	FILE:

SITE PHOTOGRAPHS

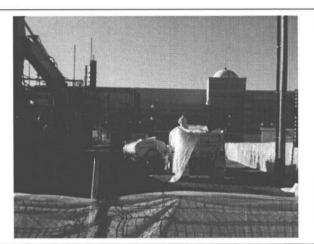




РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

PROJECT NO:

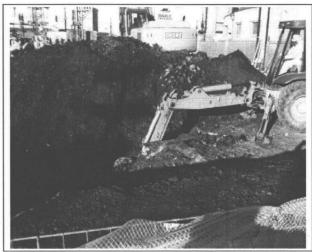
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 01/12/12	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

PROJECT NO:

DESIGNED BY:	SCALE:	DCR	
DRAWN BY: JMK	DATE 01/13/12	FILE:	

SITE PHOTOGRAPHS



PROJECT NAME:		Third West Sub - Rebuild	DATE:	, 2012		
PO & Work Order NO. :		3000078050 / 10035803	MAIN CONT	RACTOR:	Cache Valle	ey Electric
Crew Start Time:	7:00	Crew Stop Time:	17:15	5	Tot Hrs mns:	10:15
FCR Start Time:	6:40				Tot Hrs mns:	9:20
Use military time format 00:00	0.40	- TON GLOP TIME.	10.00	,	1000000	0.20
ose mintary unie romat co.co		· ·				
WEATHER CONDITIONS:		Sun n y - 20 deg	rees in AM, 40 c	degrees in I	PM	
DECORPTION: /·····		general comments, instructions to		. f		
R&R set up four monitors. CVE The testing equipment for the air A concrete vibrator became stuc crew is loading out trucks and ex	fab crew was fau k in the r cavating	or continues to form up walls for the west so Wilding was unable to substantiate north wall of the days pour and it was need. The first three trucks were concrete/dinications) was on site in the new control	section of the swite the air entrainme cessary to cut it of rt and the last two	chgear. Pount for the pour fand embed were just din the condition of the c	r was started at ur. The slump t it In the concre t. Five trucks fo WOPER/Asbes	oout 3:30. est passed. te. Newman or the day for
IF WORKING IN ENERGIZE	n elibe	STATION:				
Dispatcher login, name and time		lanny LuHaun 0642				
Dispatcher logout, name and tim		ius Montanez 1715				
DISCREPANCIES:	. _[O	No Mondaios 17 10	IMMEDIATE C	ORRECTIV	E ACTION TA	KEN:
	sub ttrat v	were under the yard rock and not included in	CVE to provide CO			
the details of concrete to be removed 11/16?- No resolution on the 20' grou	d from the	e site	0.454			
11/16:- No resolution on the 20' grou	ind rod iss	sue.	CVE to provide per	unit price to d	nii concrete.	
11/30 - Identified an additional retain Demo Plan.	ing wall th	hat is below grade and does not show on the	Will excavate to de	termine dimen	sions.	
12/14 - Communications trattery rack indicates that they were told to oroce 12/15 - Excavated to locate the 46 k ³	eed with the very capies of the	exiting the west side of the yard. Dug 8' and will be much deeper than design of new bank	Sent email and pict acceptable to RMP Sent e-mail to Roge	. Under evalu		
	ne north w	vall of the switchgear pour and it was necessa	ry to cut it off and lea	ave it embedde	ed in the concrete	. When forms
EQUIPMENT (working, deliv	Vered, i	idle):				
		impster, office trailer, conex, exclusion zone one one one one one one one one one		, crew truck, bo	oom truck. Newn	nan: portable
OSHA Recordable Safety Ir	ncident	s:	-	Reported	bv:	Time:
1						



PROJECT NAME:	Third West Sub - Rebuild		DATE:	ay, January 10), 2011	
PO & Work Order NO. :	3000078	8050 / 10035803	MAIN CONT	RACTOR :	Cache Valle	y Electric
Crew Start Time:	7:00	Crew Stop Time:	17:10	ı	Tot Hrs mns:	10:1 <i>0</i>
FCR Start Time:	6:40	FCR Stop Time:	17:25		Tot Hrs mns:	10:45
Use military time format 00:0		-	25		.,	
ose minuty unic iomat co.o		-				
WEATHER CONDITIONS:		Sunny - 20 degi	ees in AM, 40 c	legrees in l	PM	
		comments, instructions to				
out 3 trucks today, for a total of been removing concrete and so	68. John Mancin bil. He recommend on then move ahead oyees. CVE	niddle section of wall. Newman in visited the site to evaluate the list that we over-excavate an add during the new new the new new the new = 7, CVE Elect Crew	subgrade on top o itional foot, in addi naterial and install	of the native tion to the for fabric. R&F	material where bot specified in to conducted HA	Newman has he drawings ZWOPER
IF WORKING IN ENERGIZ Dispatcher login, name and tim				<u> </u>		
Dispatcher logout, name and ti						
DISCREPANCIES:	me.		IMMEDIATE CO	ORRECTIV	E ACTION TA	KFN:
11/22 - We found two fdns in the o	ld sub that were unde	er the yard rock and not included in	CVE to provide CO			
the details of concrete to be remove				J		
11/16 - No resolution on the 20' gre	ound rod issue		CVE to provide per	unit price to	drill concrete.	0
11/30 - Identified an additional reta Demo Plan.	aining wall that is belo	w grade and does not show on the	Will excavate to det	termine dimer	nsions.	,
12/14 - Communications battery ra	ick extends into the n	ortheast doorway. Capital Electric	Sent email and pict	ures to Roger	F to confirm that	this conflict is
indicates that they were told to pro			acceptable to RMP		ation by Comm G	roup
12/15 - Excavated to locate the 46 didn't find them. Will try again. AC DELAYS OR LOST TIME E	tual deoth will be muc	ch deeper than design of new bank	Sent e-mail to Roge	er F. 		
When CVE stripped the forms, I in EQUIPMENT (working, de CVE tab crew: Portable toilet (2),	spected the area whe livered, idle): forklift, 1 dumpster, of	ffice trailer, conex , exclusion zone ovasher, water truck, compactor (2),	onex (2), tool trailer,			
OSHA Recordable Safety	Incidents:			Reported	hv:	Time:
OSHA Recordable Safety	moruents.			Vehousen	by.	, illie.



Russ Johnson

PROJECT NAMÉ:	PROJECT NAMÉ: Third West Sub - Rebuild			Wednesday, Ja	inuary 11, 2012
PO & Work Order NO. :	300007B050 /	10035B03	MAIN CONT	RACTOR : Cach	e Valley Electric
Crew Start Time: 6	:55	Crew Stop Time:	17:10) Tot Hrs	mns: 10:15
FCR Start Time: 6	:45	FCR Stop Time:	16:30	Tot Hrs	mns: 9:45
Use military time format 00:00					,
				•	
WEATHER CONDITIONS:		Partly Cloudy - 25	degrees in AM, 3	37 degrees in PM	
DESCRIPTION: (work performed R&R set up four monitors. CVE fab or pull box on the west end of the switch preparation for placing of ABC backfill installed panels and bracing in the new HAZWOPER Training for five Newman below regarding ice and water inside performed to the performance of the perfor	ew continued to fo gear, cleaned out the up to footing grade v control building. In employees. Reco panel boxes.	m up the walls for the ce he inside of the switchgea e. CVE grouted tie points Newman excavated and	nter switchgear se ar foundation and and honeycomb loaded six trucks transformer and p	ection. They also sta covered it with concr on the switchgear wa for a total of 74. R&F panels (B3, B9, and E	arted working on the rete blankets in alls. CVE Elect crev R conducted B16). See note
			•		
	•				
IF WORKING IN ENERGIZED SU	BSTATION:		•		
Dispatcher login, name and time:	Bany Nielson 064	3			
Dispatcher logout, name and time:	Kim Batt 1710				
DISCREPANCIES:			IMMEDIATE CO	ORRECTIVE ACT	ION TAKEN:
11/16 - No resolution on the 20' ground rod	lissue		CVF to provide per	unit price to drill concre	ete
11/30 - Identified an additional retaining wa	Ill that is below grade	and does not show on the	Will excavate to det	termine dimensions.	
Demo Plan. 12/14 - Communications battery rack exter	ds into the northeast	doorway Capital Electric	Sent email and pict	ures to Roger F to conf	firm that this conflict is
indicates that they were told to proceed with		- ;		. Under evaluation by	
12/15 - Excavated to locate the 46 kV cable			Sent e-mail to Roge	er F.	
didn't find them. Will try again. Actual dep DELAYS OR LOST TIME ENCOL		er than design of new bank	<u></u>		· · ·
Panels B3 and B9 had ice inside the boxes backside of the panels where it puddled up	. For the most part t	he ice was not in contact wit	h the equipment but	you can see where wa	iter has stained the
EQUIPMENT (working, delivered	idle).				,
CVE fab crew: Portable toilet (2), forklift, 1		ler, conex , exclusion zone c	onex (2), tool trailer.	crew truck, boom truck	k. Newman: portable
wash-down structure, trachoe, bobcat, mir					•
				(
OSHA Recordable Safety Incide	nte:			Reported by:	Time:
OSHA Recordable Salety Incide	nts.			Reported by.	
	 -				



Russ Johnson

PROJECT NAME:	PROJECT NAME: Third West Sub - Rebuild DATE :				lay, January 1	2. 2011
PO & Work Order NO. :	300007	78050 / 10035803	MAIN CONT	RACTOR :	Cache Valle	y Electric
Crew Start Time:	6:55	Crew Stop Time:	17:05	5	Tot Hrs mns:	10:10
FCR Start Time:	6:45	FCR Stop Time:	17:20)	Tot Hrs mns:	10:35
Use military time format 00:00				<u></u>	• • • • • • • • • • • • • • • • • • • •	10.00
ose minuty time is mat bo.bo		·				
WEATHER CONDITIONS:		Partly Cloudy - 24	degrees in AM,	40 degrees	in PM	
		l comments, instructions to				
the cables from the termination products in the new control building R&R conducted and completed	oole to the vault. g and began plac HAZWOPER Tra	ated the 46 kV cables at the Gads CVE fab crew worked on the pu sing backfill in the switchgear. Ne sining for five Newman employee: R training), Miller = 2, R&R = 2, W	II box for the switce wman excavated s. CVE Line	hgear, place and loaded	d support angle	s in the a total of 82.
					•	
IF WORKING IN ENERGIZE			·			
Dispatcher login, name and time		Ison 0645				
Dispatcher logout, name and tin	ne: Kim 8att	1720				
DISCREPANCIES:		<u> </u>	IMMEDIATE C			
		ler the yard rock and not included in	CVE to provide CO	for removing	the additional con-	crete.
the details of concrete to the remove 11/16 - No resolution on the 20' ground the control of th			CVE to provide per	unit price to d	frill concrete	
,			o i = to promot por	u p to t		i
Demo Plan.		ow grade and does not show on the	Will excavate to de			
12/14 - Communications battery rac indicates that they were told to proc			Sent email and pict acceptable to RMP	_		
		e west side of the yard. Dug 8' and	Sent e-mail to Roge		ation by Commi	irouc
		uch deeper than design of new bank				
DELAYS OR LOST TIME EI	NCOUNTERED): ·	,			
				•		
EQUIPMENT (working, deli						
•		office trailer, conex, exclusion zone of washer, water truck, compactor (2), l		, crew truck, b	oom truck. Newm	nan: portable
OSHA Pacardable Sefety I	ncidonto			Ponerto-	hv:	I Time:
OSHA Recordable Safety I	noidents.			Reported	Uy.	Tille.
				•		
				<u> </u>		



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild PROJECT NAME: DATE: Friday, January 13, 3012 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: 3000078050 / 10035803 Crew Start Time: 7:00 Crew Stop Time: Tot Hrs mns: FCR Start Time: 6:45 FCR Stop Time: 15:50 Tot Hrs mns: t/se military time format 00:00 **WEATHER CONDITIONS:** Sunny - 18 degrees in AM, DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE line crew got a late start as the gas on the south side of 100 So was not staked with the rest of the area, plus they were waiting for a digging pennit from SLC. They pulled out the three phases of the Gadsby circuit CVE fab crew (2) came in long enough to lay out the 46 kV yaults. Neyman excavated and loaded five trucks for a total of 87. A load of 12 PASCOR switches came in and were redirected to the Tech Ops Warehouse and I was notified that the CCVT's came in to the Tech Ops warehouse earlier this weel CVE Line Crew = 5, CVE Fab Crew = 2, Newman 5, Miller = 2, R&R = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Jim 8ovman 0648 Dispatcher logout, name and time: Al Swinski 1550 DISCREPANCIES: **IMMEDIATE CORRECTIVE ACTION TAKEN:** 11/22 - We found two fdns in the old sub that were under the yard rock and not included in CVE to provide CO for removing the additional concrete. the details of concrete to be removed from the site 11/16 - No resolution on the 20' ground rod issue. CVE to provide per unit price to drill concrete. 11/30 - Identified an additional retaining wall that is below grade and does not show on the Will excavate to determine dimensions. 12/14 - Communications battery rack extends into the northeast doorway. Capital Electric Sent email and pictures to Roger F to confirm that this conflict is indicates that they were told to proceed with the install by Barry Andersor acceptable to RMP. Under evaluation by Comm Group

DELAYS OR LOST TIME ENCOUNTERED:

12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and

didn't find them. Will try again. Actual deoth will be much deeper than design of new bank

Panels B3 and B9 had ice inside the box. For the most part the ice was not in contact with the equipment but you can see where water has stained the backside of the panels where it puddled up.

EQUIPMENT	(working.	delivered	. idle):

CVE fab crew: Portable toilet (2), forklift, 1 dumpster, office trailer, conex, exclusion zone conex (2), tool trailer, crew truck, boom truck. Newman: portable wash-down structure, trachoe, bobcat, mini-ex, power washer, water truck, compactor (2), backhoe.

OSHA Recordable Safety Incidents:	 Reported by:	Time:



Russ Johnson

Sent e-mail to Roger F.



January 11, 2012

Laboratory Code: Subcontract Number:

RES NA

Laboratory Report: Project # / P.O. #

RES 227464-1 None Given

Project Description:

3rd West Sub RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227464-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227464-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub RMP January 10, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 11, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Ni	umber	Analyzed	Analyzed Volume Sampled		Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-010912-SW	EM	84810 6	0.0800	1007	ND	0.0048	BAS	BAS
3W-010912-NW	EM	848107	0.0800	1011	ND	0.0048	BAS	BAS
3W-010912-NE	EM	848108	0.0800	1010	ND	0.0048	BAS	BAS
3W-010912-SE	EM	84810 9	0.0800	1010	ND	0.0048	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

Effective Filter Area = 385 sq mm

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Due Date:	1.11-12	_
Due Time:	Jam	

9801 Logen St. Oenver, CO M216 • Ph: 303 984-19M • Fax 303-477-4275 • Toll Free :856 RESI-ENV Pager : 303-509-2098

	INVOICE TO: (IF	DIF	FERE	NT)				~					C	<u>ONTA</u>	CT II	NFOF	<u>KMA</u> T	TION:				
company: 12 & R Environmental	Company.						act	Javi	2 6	ශ	legi	Øy.				Com						
ADDIOSA: 47 W 9800 E	Address:					Pho		80L	<u>54</u>	1-10	25					Pnor						
Sundy U1 84070						Fttk:										Fax:						
							paoor				44					Cen	pagor:					
Project Number cod/or P.O. #:						Final Date Dollvomblo Emoli Address: devel or renvivoroni									- 1							
Preject Doscription/Locotion: 3 # West Sub RVD							<u>U</u>	ve:	7.1	CEN	INN	200) MA									
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm					F	REQUI	EST	ED A	NAL	YSIS	\$				VA	LID	MATE	RIX CO	DES	LAF	NOTE	S:
PLM / PCM / TEM RiJSH (Same Day) 🗶 PRIORTIY (Next Day	STANDARD	1 1	}					- } }			- 1			1	Air	= A			ılk = B			
(Rush PCM = 2hr, TEM = 6hr.)	·	1													Oust				int = P			
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm	<u></u>	1							-			11			Soil				pe = W			
Metal(s) / Dust RUSH 24 hr 3-5 Day	"Prior notification is		Quant.						9	.		!				= SW			= Food		—–	
RCRA 8 / Metals & Welding RUSH 5 day10 day	required for RUSH	통	8 ,			Scan			- Stanfferent				8	Drin	ing W	_	0 = 0		Water = WW			
	tumarounds.**	Point Count	∻ Š _E			S S			0,00		ļ		2 2		STM 8	_			mod'e only**			
Organics 24 hr 3 day 5 Day MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - Spr	·	2	ISO, +/-, irect Preps			Meta's			å	š	5 5	زاءا	ER NOTES	\vdash	7	7	1	<u> </u>				
E.colt O157:H7, Coliforms, S.aureus 24 hr 2 Day	3-5 Day	뒿	7402, 30-Indii	5		ģ			8	5 [훏	Quantification	20	니꾼			1			 -	<u> </u>		
Salmonella, Listeria, E.coli, APC, Y & M 48 Hr3-5 Day		Long report		OSHA	9	15			1	: 율	3 5		2 2 E		- 1	1	1	l	i i			
MoldRUSH24 Hr	48 Hr3 Day\$ Day		Level II, 0-vac, II		Respirable	S S		🕏	į	18	১ ১	8 3	TALS OR OI						i			
"Turnaround times establish a laboratory priority, subject to laboratory volume and a	o not guarantoed. Additional fees	report,		7400B,	Res	æ ₹	표	\$ \$	+f-	3 8	÷ ÷	1-1	ĭ E	۾ ا		İ			i			
apply for afterhours, weekends and helidays."		F F	AMERA, uant, Micr	7400A	Total,	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume,	ORGANICS - METH	Salmonefla: •/- E.cofi O157:H7:	7 0	[÷		 ≑ :	: Z	Sample Volume	1,	g g	1	İ	i			
Spocial Instructions:		Short	- AME	15	۱ ۲	φ. 	S	Salmones E.coti O 19	Listeria:	3 5	Cofforms: S.aureus:	1!	E E	ا ق	(L) / Augo	# Containers	.	Date	Time	EM Nur		
		ı.	ΣĘ	PCM	DUST	₹ §	8	Sa:	LJ.	E.cof:	8 8	> :	MPLE	ē	<u>د</u> ا غ	۾ اڇ	Col	lected	Collected	١ ،	Jso Only)	
Client sample ID number (Sample ID's must be unique)	PLR	TEM	8	a	불운	ő			OBIC	POC.	<u> </u>	8	S.	3 3	<u> </u>	mn	π/dd/yy	hh/mm a/p			
1/3W-Di09125W			\times	L										1,00	77 A		out	4/12		84	<u>s (c</u>	<i>ڪ</i> 3
2 3W-010917 NW														1,0						i	Ç	27
3 3W-010912 NE														11.0	0						4	22
23w-010912 SE			T									П		1,01	0 1	,	Τ,			1	 1	Ø9
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9		L								\perp		11	4	_		_	↓					
10			L																İ			
	nal samples shall be listed on																					
NOTE: REI will analyzo incoming samples based sporrint/crmation received and will not be reanalysis as indicated on this Cipain of Custody shall constitute an analytical genuies ogreem	esponsible for errors or omissions in c	olculo:	tions ros	ulting f	ronfi	he inaco	iracy o	of origin	al data	3. By s	i g ning months	dient/c	ompany n	opresent	otive ag	roos to	itit subn	nission of	the lollowing sa	mples for rec	lnestod	
a majorità di marcatta di una diperi di daglitty ana consecuto an aj priyoto da viasa differin	0	, , .e.iii	0 00				<i></i>	7				,										
Relinquished By: Www Promise Te	LEX			Date	e/Tir	ne.Dil	\mathcal{U}_{l}	112		$\overline{}$	>			-			ndition	_	_	Sealed	Intac	
Laboratory Use Only	officer 1	_ ,	ه دی			Carrie	Ė	لهيعة	=			_		_	Temp.	(F*)		_ Y	es/No Y	es / No	Y931	No
Boarder I	e/Time: /-/0/1-		151c	2012		carne					====		_	Data			—	Time		Initia		
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Contact Phose Email Fax Date	' Time Init	ials /		ontact				Phone	e Fu	nau F	-ax			Date				Time	-	Initia	15	

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A =	Amosite	F =	Fiber
An =	Anthophyllite	B =	Bundle
C =	Chrysotile	C =	Cluster
Cr =	Crocidolite	M =	Matrix
T =	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

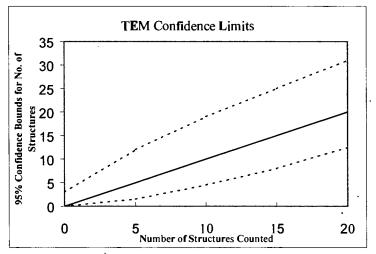
1 length unit = 5 mm on screen = 0.278 micron 1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client:	Rock
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1007
Date received by lab	1/10/12
Lab Job Number:	227464
Lab Sample Number:	848106

Lab Sample Number.	848106
F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary filter used	-
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	
Analysis date	1/12/12
Method (D=Dlrect, I=Indirect,	
IA=Indirect ashed)	
Counting rules	
(ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	sions	Identification	Mineral Class	· · · · · · · · · · · · · · · · · · ·		·	1 = y	es, blank	= no
0,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Туре	Primary	Total	Lenath	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E3-3	ND				 								
	C3:3	ND			Pusa	A	70.6	ahut	5-1	7% a	lebus			
	133-3	ND			Pris	B	80 %	inhat	5-7	who de	bns			
	A3-3	ND			1		·							
3	6-4-1	ND.			·			,						
	F4-1	ND						B 1/11/12						
	E4-1	NO						/ / / /						
	C4-1	ND			-		-							

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	Rok
Sample Tyoe (A=Air, D=Dust):	· A
Air volume (L) or dust area (cm2)	lot
Date received by lab	1/10/12
Lab Job Number	227464
Lab Sample Number.	848107

F-Factor Calculation (Indirect Prep Fraction of primary filter used		
Praction of primary filter used	·	
Total Resuspension Volume (ml)	•	
Volume Applied to secondary filter	***	

Analyzed by	JB
Analysis date	ilipliz
Method (D=Direct, I=Indirect,	- / ·
IA=Indirect, ashed)	T>
Counting rules	
(ISO, AHERA ASTM)	<u> </u>
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions		Identification Mineral Class					1 = y	es, blank	= no
	Gild Opening	Туре	Primary	Total	Lenath	Width		Amohibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-6	ND		•										
	64-6	ND			Pu	s A	80-	Ven hin F		5-7%	debus			
	F4-6	ND			Pin	o B	70	Voia funt	. 5	-7 %	Lbus	-	· . "	
	E4-12	ND					,							
3	H3-1	ND			· .	,		/						
	(33-1	ND						B 1/11/12						
	F3-1	8												
	E3-1	20					-							
								·						

Laboratory name:	REI
Instrument	JEOL 100 CX N (5)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client:	R	4	2 .	
Samole Type (A=Air, D=Dust):		A		
Air yolume (L) or dust area (cm2)		101	O	
Date received by lab	ı	l to	12	
Lab Job Number:			464	
Lab Sample Number:	848105/			

F-Factor Calculation (Indirect Preps Only):							
Fraction of primary filter used							
Total Resuspension Volume (ml)							
Volume Applied to secondary filter (ml)							

Analyzed by	J13
Analysis date	1/17/12
Method (D=Direct, I=Indirect,	7
IA=Indirect, ashed)	D
Counting mles	4.1
(ISO. AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Stmcture	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = yes. blank = no		= no
Gild	Grid Opening	Туре	Primary	Total	Lenath	Width	identiloation	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K3-3	ND							,					
	H3-3	ND							•				-	
	63-3	ND			1 Ca	DA A	43	~80 hoin	hat		La de lins			
	F3-3	ND		·	. ,	1	: -	1						
13	K4-1	WD			· .			1B:1/11	12					٠
	H4-1	\mathcal{N}						75 /				· .		
	GU-1	ND						/. 						
	FU-	NO											, !	
		_												
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	1
Laboratory name:	REI
Instrument	JEOL 100 CX N (5)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale. 1L =	0.28 4111
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	
(A) 1 1 7 P C	

Client :	Rok				
Sample Type (A=Air, D=Dust):	A				
Air volume (L) or dust area (cm2)	1010				
Date received by lab	1 10 12				
Lab Job Number:	227464				
Lab Sample Number.	848109				

Analyzed by	JB
Analysis date	1/12/12
Method (D=Oirect, I=Indirect,	//-
IA=IndirecL ashed)	D
Counting rules	
(ISO. AHERA. ASTM)	AH.
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary filter used	

Total Resuspension Volume (ml)

Volume Applied to secondary filter
(ml)

Grid	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = yes, blank		= 00
	Ond Opening	Туре	Primary	Total	Lenath	Width	i de la constantina della cons	Amphibole	С	NAM .	Sketch/Comments	Sketch	Photo	EDS
0	14-3	ND												
	H4-3	ND			Puna		80/11.	a fant	5%	deb	n\$		•	
	64-3	ND			Pris	B	90 % in	Im t	5%	debu	5			
	F4-3	ND										}		
B	144-4	ND												
•	44-4	ND.												
	(94-4	ND					18	1/11/12						
	F4-4	NO					1/1-				. ,			

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



January 12, 2012

Laboratory Code: Subcontract Number:

RES NA

Laboratory Report: Project # / P.O. # Project Description: RES 227548-1 None Given

3rd West Sub RMP

Eldon Romney
R & R Environmental

Sandy UT 84070

47 West 9000 South #2

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227548-1 is the job number assigned to this study. This report Is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described In this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage Is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227548-1

R & R Environmental

Client:

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub RMP

Date Samples Received:

January 11, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 11, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Number		Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration .	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-011012 SW	EM	848727	0.0800	1054	1	0.0046	0.0046	12.5	
3W-011012 NW	EM	848728	0.0800	1052	1	0.0046	0.0046	12 .5	
3W-011012 NE	EM	848729	0.0800	1053	ND	0.0046	BAS	BAS	
3W-011012 SE	EM	848730	0.0800	1054	ND	0.0046	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected BAS = Below Analytical Sensitivity Filter Diameter = 25 mm

Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 227548-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub RMP

January 11, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 11, 2012

Client Lab ID Number ID Number		Asbestos Mineral	Ast	estos Str	ucture Typ	es*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for	
			•	Fibers	Bundles	Clusters	Matrices			Concentration
3W-011012 SW	EM	848727	Chrysotile	0	0	0	1	0	0	1
3W-011012 NW	EM	848728	Chrysotile	1	0	0	0	0	0	1
3W-011012 NE	EM	848729	ND	0	0	0	0	0	0	0
3W-011012 SF	FM	848730	ND	0	0	0	0	0	0	0

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to i ncorrect as pect ratio

ND = None Detected

Due Date: 1 · 12 · 12 Due Time: 1015

RESERVINES ENVIRONMENTAL, INC... 8801 Logon St. Denver, CO 80216 • Ph; 303 e84-1996 • Fex 303-417-4275 • Toll Free :966 RESI-ENV. Page: - 303-850-2068

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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

<u>Asbestos Type</u> <u>Structure Types</u>

A = Amosi	ite F =	= Fiber
An = Antho	phyllite B =	= Bundle
C = Chryse	otile C =	= Cluster
Cr = Crocio	dolite M =	= Matrix
T = Tremo	olite	

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

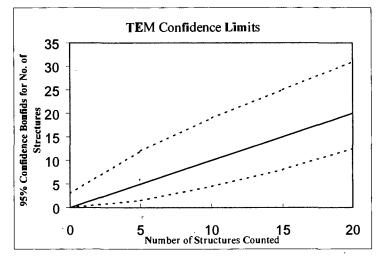
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX 11 S
Voltage (KV)	100 KV
Magnification	(20KX)10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

RHR
A
1054
1/11/12
227548
848727

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used

Total Resuspension Volume (ml)

Volume Applied to secondary filter

	(ISO, AHE
18	Grid stora
71°	Scope Ali

Analyzed by	-UC
Analysis date	1/11/12
Method (D=Direct, I=Indirect, IA=Indirect, astred)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Stmcture	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = yes, blank = no			
	J + P3	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	F4-4	M						,			1				
	E4-4°	M				Pn	y Ante	Lintaci ~	52.2	brz			,		
	04-4	Mo				ln	es b u	Lintacs ~	2	1/11	112				
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laboratory name:	REI
Irstrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Nagnification	(20KX)10KX
Old opening area (nm2)	0.01
Sale: 1L≃	0.28 um
Scale: 1D ≖	0.0% um
Rimary filter area (nm2)	385
Socondary Filter Area (nm2)	
(iA Tyce	

Client:	RTR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1052
Date received by lab	1/11/12
Lab Job Nizmber:	227548
Lab Sample Number:	848728

Frsctien of primary filter used	
Total Resuspensk n Voltime (ml)	
Volume Applied to Secondary filter (ml)	

Analyzed by	-W
Analysis date	1/11/12
Method (D=Direct, l=Indirect, 14=Indirect, ashed)	D
Counting mies (ISO, AHERA, ASTM)	AH
Grld storage location	Month Analyzed
Scope Alignment	Data Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Idsntification	Mineral Ctass				1 = yes, blank = no		
	Grid Operang	Туре	Primary	Total	Length	Width	iositarioaspii	Amohlbole	С	NAM	Sketr:h/Comments	1, 75, 164		EDS
A	GS-6	M												
	P5-6	4		1	2	1	co				/		•	
	25-6	M)					ProxA	soil intact	3-	57.0	ebn			
	C5-6	M					Pra P	sol intact	11/2	2 /	111/12			
B	96-4	M								/				
	F6-4	M				•								
	66-4	3					·						,	
	ca-4	3					•	·						
														-

Laboratory name:	REI
hstmment	JEOL 100 CX N (S)
Yoltage (KV)	100 KV
liagnification	(20KX)10KX
Grid opening area (nm2)	0.01
Scale: 1L =	0.28 um
scale: 1D =	0.056 um
Frimary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	RTR
Sample Type (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	1053
Date received by lab	1/11/12
Lab Job Number:	227548
Lab Sample Number.	848729

Fraction of primary filter used	•
Total Resuspenaion Volunie (mi)	
Volume Applied to secondary filter (ml)	

Analyzed by	-IK
Analysis date	1/11/12
Method (D=Direct, I=IndIrect, IA=Indirect, ashed)	D.
Counting mies (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mcteres	Dime	nsions	Identification	Mineral Ctass				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	95-4	M												
	P5-4	W				Prop	, A 80%	ment 1	57.	deb	r s			
	F6-4	M				Pre	BIA							
	26-4	M						1/11/1	2-	Section 1				
B	46-4	M												
	F6-4	. W							,					
	86-4	M												
	C6-4	M					-							
											·			

Laboratory name:	REI
Instmment	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
3rki opening area (mm2)	0.01
Scale: 1L =	028 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (rnm2)	
QA Type	

Client:	R+R
Sample Type (A=Air, O=Dustj:	A
Air volume (L) or dust area (cm2)	1054
Date received by lab	1/11/12
Lab Job Number:	227548
Lab Sample Number:	848730

F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Scope Alignment	Date Analyzed
Grid storage location	Month Analyzed
Counting miles (ISO, AHERA, ASTM)	AI
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Analysis date	1/11/12
Analyzed by	-IK

Grid	Grid Opening	Strncture	No. of St	mctures	Dime	nsions	Identification	Mineral Ctass				1 = ves, blank = no		: ≠ no
Gilo	Gud Opening	Type	Primary	Total	Length	Width	Identinoation	Amphibole	С	NAM	SketcivComments	Sketch	Photb	EDS
A	93-6	M												
	F3-6	NÓ				Pna	A 1900	intact -	157	Lek	Ż			
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8	84-4	10		•										
	C4-4	M							·					
	B4-4	M								_				
	Arry	M					-							
		•							•					
												;		

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



January 13, 2012

Laboratory Code:

RES NA

Subcontract Number: Laboratory Report:

RES 227613-1

Project # / P.O. #
Project Description:

None Given
3rd West Sub RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227613-1 Is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0019

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227613-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub RMP

Date Samples Received:

January 12, 2012

Analysis Type: Turnaround:

TEM, AHERA 24 Hour

Date Samples Analyzed:

January 13, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Number		Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-011112 SW	EM	849375	0.0800	1007	ND	0.0048	BAS	BAS	
3W-011112 NW	EM	849 3 7 6	0.0800	1014	ND	0.0047	BA\$	BAS	
3W-011112 NE	EM	849377	0.0800	1014	ND	0.0047	BAS	BAS	
3W-011112 SE	EM	849378	0.0800	1014	ND	0.0047	BAŞ	BA\$	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected BAS = Below Analytical Sensitivity Filter Diameter = 25 mm Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.010

DATA QA

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite T = Tremolite	F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

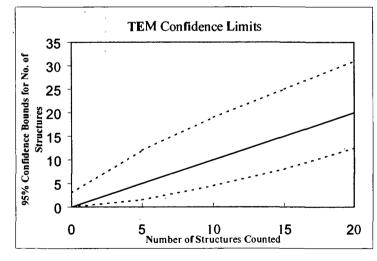
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	20100 1010X
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 10 =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyce	

Client :	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1007
Date received by lab	1/12/12
Lab Job Numben	227613
Lab Sample Number:	849375

F-Factor Calculation (Indirect Prep	s Only):
Fraction of primary filter used	•
Total Resuspension Voluma (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	113
Analysis date	11.3/12
Method (D=Dtrect, I=Indirect, IA=Indirect, ashed)	776
Counting rules (ISO, AHERA, ASTM)	AH:
Grid storage location	Month Analyzed
Scope Alignment	Data Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions Identification		Mineral Class			1 = yes, blank = no			
	, The The The The The The The The The The	Туре	Primary	Total	Length	Width	'	Amphibole	С	NAM .	Sketch/Comments	Sketch	Photo	EDS
A	43-3	ND		. :		, .								
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13	H36	ND					18 /	13/12						
	63-6	ND					17 1	7'			·			
	F3-6	ND									·			
	E3-6	ND					•				•			
														•
								: "						

Laboratory name:	REI
Laboratory frame.	
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	EORX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Rak
A
1014
1/12/12
227613
849376

Lab Sample Number:	1849370							
F-Factor Calculation (indirect Preps Only):								
Fraction of primary filter used								
Total Resuspension Voluma (ml)								
Volume Applied to secondary filter (mf)								

Analyzed by	J13
Analysis date	1/13/02
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	176
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions		Dimensions Identification		Mineral Class			1 = yes, blank = no		
	770	Туре	Primary	Total	Length	Width		Amofilbola	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	634	ND											·	
	F34	ND						•	· ·					
	E3-4	ND.		1	tw	s A	73	~80%	inh	af.	5% deb	n's	3.14.70	
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3	H3-3	ND						18	1/13/	12				·
-	63-3	ND						//-	/ /					
	F3-3	ND												
	E3-3	M					. •							
		·												

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	EORX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAK					
Sample Type (A≕Air, D∞Dust):	A					
Air volume (L) or dust area (cm2)	1014					
Date received by iab	1/12/12					
Lab Job Number:	227613					
Lab Sampla Numben	849377					
· · · · · · · · · · · · · · · · · · ·						

F-Factor Calculation (Indirect Prep	s Offiy).
Fraction of primary filter used	
Total Resuspension Voluma (mi)	
Voluma Applied to secondary filter (ml)	

Analyzed by	J13
Analysis date	1/13/12
Method (D≖Direct, I≖Indirect, IA≃Indirect, ashed)	1 1 5
Counting rutes (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			1 = yas, blank = no			
			Primajy	Total	Length	Width		Amphibole	С	NAM	Sketcti/Comments	Sketch	Photo	EDS
A	63-1	ND				<u> </u>						<u></u>		
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<u> </u>	E3-1	ND					·.						٠٠	
	C3-1	ND.							h		/			
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	F3-1	ND.						. []						
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	(3-1	2					-							

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	EOKX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	

Client:	RAK
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1014
Date received by lab	1/12/12
Lab Job Number:	227613
Lab Sample Number:	849378

Fraction of primary filter used	
Total Resuspansien Volume (mi)	
Volume Applied to secondary tilter (ml)	

Analyzed by	313
Anatysis date	11.3/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	75
Counting mies (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = ves, blan		= no
0.112	Ond Quoning	Туре	Primary	Total	Length	Width	idonarioa ion	Ampfribole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-1	ND												
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	t4-1	W)									V			
6	(95-)	WD					•	Bilis	12					
	F5-1	ND.				, .		JT / 1						
	E5-1	ND												
	C5-1	ND					•							
,														

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Filter loading, s/mm² = $\frac{\text{\# Asbestos stmctures}}{\text{Area Analyzed (mm}^2)}$

GO = TEM grid opening



January 16, 2012

Laboratory Code: Subcontract Number:

res Na

Laboratory Report: Project # / P.O. #

RES 227675-1 None Given

Project Description: 3rd West Sub RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227675-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227675-1

Client:

R & R Environmental

Client Project Description:

Client Project Number / P.O.: None Given

Date Samples Received:

3rd West Sub RMP January 13, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 13, 2012

Client ID Number	Lab ID No	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures	Analytical Sensitivity		Astrestos entration ,	Filter Loading
			(mm²)	(L)	Detected	(s/cc)	•	(s/cc)	(s/mm²)
3W-011212 SW	EM	849730	0.1000	783	ND	0.0049		BAS	BAS
3W-011212 NW	EM	849731	0.1000	78 1	ND	0.0049		BAS	BAS
3W-011212 NE	EM	849732	0.1000	776	ND	0.0050		BAS	BAS
3W-011212 SE	EM	849733	0.1000	768	ND	0.0050		BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity
Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

Signed by San Vestrano Desc. 2012.01.16 - 06.4121 - 07.41 A QA

Due Date: 1/14/12 Due Time: AW

RELAB Reservoirs Environmental, Inc.

Job #_____ Page ___1___of ____

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Project Number and/or P.O			-0												sble Eme											
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	$\mathbf{C}_{\cdot} =$	Cluster
Cr	=	Crocidolite	M =	Matrix
T	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

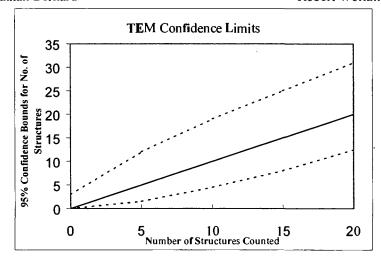
XGB = partly obscured by a grid bar

Sizing Conversion 1 length unit = 5 mm on screen = 0.278 micron 1.80 length units = 0.5 micron 18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magaification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondaty Filter Area (mm2)	
QA Type	

R+R
A
783
1/13/12
227675
849730

Frection of primary filter used	
Total Resuspension Volume (mi)	
Yolume Applied to secondary filtar (ml)	· · · · · · · · · · · · · · · · · · ·

Analyzed by	1K
Analysis date	1/13/12
Method (D=Direct, I=IndIrect, IA=Indirect ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	nictures	Dimer	nsions	Identification	Mineral Class	•			1 = ves, blank = no		
		Туре	Primary	Total	Length	Width		Amphibale	. с	NAM	Sketcti/Comments	Sketch	Photo	EDS
A	F3-4	M							<u> </u>					
	E34	M				Pm	1 A 170	CWack -	15/2	leb	<u>15</u>		·	
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6	H4-4	M												
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	CHY	M										-		

Laboratory name:	iteacrain Embassical d.Co.
Instrument	JEOL 100 CX N
Voltaae (KV)	too KV
Maanification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.2 9 um
Scale: 1D =	0.058 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	Not OA

Client:	R & R
Sample Type (A=Air, D=Oust):	A
Air volume (L) or dust area (cm2)	781
Date received by lab	01/13/2012
Lab Job Number	227675
Lab Sample Number:	849731

Fraction of primary Riter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	-

Analyzed by	n.zimbelman
Analysis date	01/13/2012
Method (D=Oirect, i=Indiect, IA=Indiect, ashed)	D
Counting nales	
(ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Client Sample ID Number:

Grid	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
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	42-3	アン												
	62-1	79												
	42-1	L4			5	· 55	Y201	- 3-5 %	JEI	bny)				

Laboratory name:	Reservative Eastreamental, bic.
Instrument	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification (20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.2 9 um
Scale: 1D =	0.05 8 um
Primary fitter area (mm2)	365
Secondary Filter Area (min2)	N/A
QA Type	Not QA

Client:	R & R
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	776
Date received by lab	01/13/2012
Lab Job Number:	227675
Lab Sample Nurrber:	849 732

Fraction of primary filter used	1
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	n.zimbelman
Analysis date	01/13/2012
Method (D=Direct, I=Indirect, IAsIndirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grhi storage location	hbnth Analyzed
Scope Alignment	Date Analyzed

Client Sample ID Numbert

Grid	Grid Opening	Staicture	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width	,	Amphibole	С	NAM	Sketch/Comments	Sketch	Rioto	EDS
A	£4_4	NJ											,	
	E(,(٦٦			·									
	74_1	NJ												
	64-1	FF												
	63-1	اله												
	F3-1	لله			-A:	73	12 SUH	- 1-3 6-	とかん	1)				
B	65-	47								′				
	63-1	الادع												·
	64-1	현적												
	62-1	レリ			B	: 90	SUTA	<1. 1-3 h		agu	√			

Laboratory name:	describt (Indonestide:
Instrument	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification	20KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.2 9 um
Scale: 1D =	0.05 8 u m
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	N/A
QA Type	VC

Client:	R & R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	768
Date received by lab	01/13/2012
Lab Job Number:	227675
Lab Sample Number:	849733

Frection of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	n.zimbelman
Analysis date	01/13/2012
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Client Sample ID Numbers

Grid	Grid Opening	Stmcture	No. of Str	uctures	Dimensions		Dimensions		Dimensions		Dimensions		Dimensions Identification Mineral Class					1 = yes, blank = no		
	Cita Opering	Type	Primary	Total	Length	Width	Identinoation	Amphibole	С	NAM	Sketch/Comments	Sketch	Fhoto	EDS						
+	43-1	HD																		
	63-1	AP										_								
	#3-3	ND																		
	44.3	MY									•									
	64-1	74			Ra	1.4	85 7	24Tac T.	3-5	[N	E Baz									
	74-3	477									,									
7	15-4	k d										٠								
	<u> </u>	40																		
	まっし	48																		
	£(-(34	el-b	: ~ A												

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotile

NAM = Non-asbestos material
C:\Usars\TEM.REH.AB\Oeskap\TEM.Count Sheet-Exia

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



January 17, 2012

Laboratory Code: Subcontract Number:

res Na

Laboratory Report: Project # / P.O. # Project Description: RES 227791-1 None Given

3rd West Sub RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227791-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227791-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub RMP January 16, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 17, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID N	O Number Analyzed		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-011312 SW	EM	850664	0.1000	793	ND	0.0049	BAS	BAS
3W-011312 NW	EM	850665	0.1000	857	ND	0.0045	BAS	BAS
3W-011312 NE	EM	850666	0.1000	79 2	ND	0.0049	BAS	BAS
3W-011312 SE	EM	850667	0.1000	792	ND	0.0049	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

DATA QA

Due Date: 1	17-12
Due Time:	191:50 AM

REILAB RESERVOIRS ENVIRONMENTAL, INC. 6M1 Lagan St. Denver. CO 803 19 - Ptr 303 984-1MS - Fax 303-477-4275 - Tea Free :866 RESI-ENV

Job #_			
Page	1	_ of	

	Pager : 3034											~~	UT A AT	INC	^	ATION	_		
Company: Q & Q Company: Lt	INVOICE TO: (JCompany:	IF DIF	FERE	:N I)		Contact	75		J	i V		-	VIACI		Contact	MATION:			
Address:	Address:				- 1	Phone: David Police (leg							Phone:						
						Fax:								Fax:					
	 					Cell/peg	er. ((9)	1.52	11-	123	5			-	Ce4/pao	er			
Project Numbor and/or P.Q. #:					\neg	Rinal D	ata Doltvar	able Em	ali Add	66t:									
Prinject Discription/Location: 3 to West Sub (LMP)					$\neg \neg$	4	ave e	2 Yr	eni	d D.	ww	٦.							
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm		1		fei i,	PEO		TED A							ALI		ATRIX C	ODES		AB NOTES:
PLM / PCM / TEM RUSH (Same Day) K PRIORITY (Next Day) STANDARO	┵	,	T	- 1/20	1	ΤŢŢ			İΤ	TT	\dashv		r = A			Bulk = B		AD HOTEO.
(Rush PCM = 2lir, TEM = 6hr.)	,	1	ł		1					1]	11	ŀ		St = [Paint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: 8ajm - Spm		7)	1 1	-	- 1	111]]	Ī	Sc)ii = S	3	V	Vipe = W		
Metal(s) / DustRUSH 24 hr3-S Day		7	+				1			11	1		Swa	b = S	W.		= Food		
RCRA 8 / Metals & Weiding RUSH 5 day10 day	**Prior notification is required for RUSH	Ę	Ogent,	11	+1	s	111	ig g		11	8		Orinking	Water	r = D1	N Waste	Water = W	W	
Tune Geatty Toba	turnarounds.**	[8	÷ \$		- •	S .	111	Ę		11	3 2	- 1				= Other			
Organics 24 hr 3 day 5 Day		Point Count	35. F P	1 1	-	Metals		3	.8	8		ŀ	"ASTN	E176	12 app	roved wipe	media only		
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9atn - 6pm		닉륗		1_1			111	5	ntification Quantification	Quantification	Mod: +/-, Identification, Quantification SAMPLERS INITIALS OR OTHER NOTES		.]				<u> </u>	
	3-5 Day	듍	7402 ISO-Ind	SS HA		5		+	Eggar The state	r Quantification	§ 5								
Salmonella, Listeda, E.coll, APC, Y & M48 Hr3-5 Day Mold RUSH 24 Hr	48 Hr 3 Day 5 Day	Log Sign	= 3		ğ	<u>e</u>	1 4	빌	22	1~13	蠹	- 1	(1			ľ		· · · · · · · · · · · · · · · · · · ·
~~~~~~~ <del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>			Level II. D-vac, IS	7400B.	Respirable lyte(s)	₹   ₹	13 6	훙	ō ō	5 2		ı	_	ł	- 1		}	<b></b>	
**Turnaround times establish a laboratory priority, subject to laboratory volume and all apply for anerhours; weekends and holidays.**	re not guaranteed. Additional ret	- 1 €		1 ' 1	구 ( 호 (	RCRA 8, TCLP, We ORGANICS - METH	almonella: +/ coli 0157:H7:	+/- Plate Count:	8 ∓	* ,		- 1	Sample Volume (L) / Area		8			<u> </u>	
Special Instructions:	<u> 18-19, B. B. B. B. B. B. B. B. B. B. B. B. B. </u>	Short	AHERA, uant, Mic	§ ;	- Total	ြု ဗွ	9 9 9 9	9 S	1	S	÷ 8	I.	፮ 🌡	8	<u> </u>			EM N	umber (Laborator
		۱º۶	٠ ٣		:   <del>3</del> :	%   <del>Z</del>	Salmonella: E.coli O157	sts of	8 2	S.aureus:	물물	- }	Sample V (L) / Area	ž	Containers	Date	Time	)	Use Only)
Client sample ID number (Sample ID's must be unique	) 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	- ∄	Semi	Š	DUST - Total, Respirable METALS - Analyte(s)	5 8	27 1001	MICRO			\$ S		28	Martrix	۱ پ	Collected mg/dd/yy	Collect		
1 3W-04312 SW		$\top$	又	$\Box$		T		$\Box$	Ī	П	$\top \top$	T	793	A	1	XII din	,	1 5	150664
2 711-0112 2 1/11			<u> </u>			_					11		357	71	7	J	1	1	65
3 3W -1911317 NE		+					$\dagger\dagger$	- -		H	11	_	192	Ħ	+	1	1		66
4 3W-011317 SF		1	Н.	1-1-	+-	7	111	- -	+	11	++		792	11		1	1	1	7
5		+	<u> </u>	1-1-			1 1 1	$\dashv$	-   -	++	$H^{-}$		100	*			+		
6				<del>   </del>	<del> </del>	+		+	+	++-	+ -		::	-	+	<del>~</del> ;	<del> </del>	<del>-  </del>	<del></del>
<del></del>		+		1-1	+-	- -	╅╌┼╌╉	-	+	H	+-	$\dashv$	-	+	+		+	+	<u> </u>
7	<del></del>	-1-4	<u></u> :	╂╾┼	+-		┦┼┤			╁╾╁╌	+-	$\dashv$					-	<del></del>	<del></del>
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9				11			$\bot \downarrow \downarrow$	_			$oxed{oxed}$	$\perp$		$\perp$	Ŀ				
10			. :						ŀ				. '	-	.   '			1	<u></u>
	nal samples shall be listed o			_	-														
NOTE: REI will analyze incoming samples beard upon information received and will not be re analysis as indicated on this Chair of Custody shall constitute an analytical services agreeme													Sentative	agrees	i that s	obmission c	if the followin	g samplas for	requested
	& Ex									<u> </u>			T _a						<u> </u>
Relinquished By:	vrr ,			Oate/	·ine:	UH,	13/12						_	ple C p. (F	condit		On ice Yes / No	Sealed Yes / No	Vea/No
	e/Time: 1/1/2/17		10 10	20t	vi∕&arı	ier:	G	Je.	<u> </u>				ı em	p. (F)	<u>'</u> –		188 / 140	162/140	109/140
Results: Contact TANK Phone Email Fax Date I	1711 Time #9.101n	itials/	/ Dc0	ntact			Phone	Ema	íl Fax				ate			. Tir	ne	ln'	tials
Contact Partie Email Fax Date	Time in	itials	Co	ntact			Phone	Ema	il Fa	κ			Date			Ti	ne	[n]	tials

# **Attachment I**

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

## Asbestos Type

## Structure Types

A =	Amosite	F = Fiber
An =	Anthophyllite	B = Bundle
C =	Chrysotile	C = Cluster
Cr =	Crocidolite	M = Matrix
T =	Tremolite	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

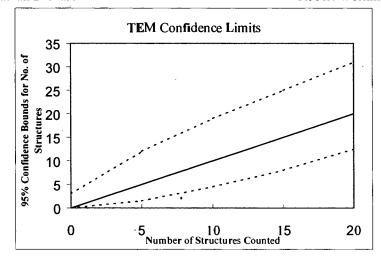
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

## **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI .
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	,

RAR
A
793
1/16/12
227791
850664

Analyzed by	JB
Analysis date	1/17/12
Method (O=Oirect, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Artalyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	reps Only):	
Fraction of primary filter used		
Total Resuspension Volums (mi)		
Volume Applied to secondary filter (ml)		

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class		,		1 = y	es, blank	= no
Gild	Grid Opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM.	Sketch/Comments	Sketch	Photo	EDS
A	146	ND									·			
	64-6	ND			Bas	A	2/3	70% al	Int.	3-5%	Lebur			
	F4-6	ND												<u> </u>
	E4-6	ND							· .					
	C4-10	NO				•								
B	K5-3	ND												·
	45-3	W.						·				_		
	615-3	ND										·		
:	F5-3	ND								,	`			
	E5-3	ND.												

Laboratory nama:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area	885
(mm2) Secondary Filter Area	000
(mm2)	
QA Type	<u></u>

Client :	Rock
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (fcm2)	857
Date received by tab	1/16/12
Lab Job Number:	227791
Lab Sample Number:	850665

Analyzed by	JB
Analysis date	1/17/12
Method (D=Dlrect, l=Indirect, iA=Indirect ashed)	Ď
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	reps Only	·):	
Fraction of primary filter used			
Total Resuspansion Volume (mi)		•	
Volume Applied to secondary filter (ml)		•	

Grid	Grid Grid Opening Structure				Identification	Minaral Class				1 = yes, blank = no				
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K34	1/17					·							· :
	H3-4	ND_				m	: 80	him bor	/ ·· ·	5-5	The debus			
L	613-4	ND			<b> </b>	1/	70°	he is for t		5-7	Lo de Pri			
	F3-4	ND			·							<b>,</b>	·	,
	E3-4	ND						B 1/19	/12					
	C3-4	ND												
3	14-3	ND												
	614-3	M			·		-			:				•
	F4-3	MS								· ·	`			
	E43	<i>M</i> 5.												;

	T
Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0,28 um
Scale: ID=	0.056 um
Primary filter area	385
(mm2) Secondary Filter Area	365
(mm2)	
QA Tyoe	L

Roll
Α
1/16/12
227791
850666

F-Factor Calculation (Indirect Pr	epe Only):	
Frection of primary litter used		
Total Resuspenaion Volume (mi)		
Volume Applied to secondary filter (ml)		

Analyzed by	JB
Analysis date	1/17/12
Method (D=Oiract, I≃Indirect,	
IA=Indirect, ashed)	
Counting miles	14
(ISO, AHERA, ASTM)	//TU
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	ċ.	NAM	Sketch/Comments	Sketch	Photo	EDS
A	13-6	WD				·	1							
	K3-6	·ND			In	0 /	80%	minhut	٠. ک	In N	ebu c	·	,	
	#3-6	MD			Pm	510	60%	unhart	5	of the	elons			!
	613-6	$C_{N}$					1							
<u>:</u>	F3-4	MD					13	1/12/12	. , .					
B	141	N					//	17	·					
	K4-1	<b>√</b> ^			:		7							
	144-1	M							·	:				
	Cos4-1	W									`			
	F4-1	MD												

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Roll
A
1/16/12
227791
850667

F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JK
Analysis date	1/17/12
Method (D=Direct, l=Indirect,	
IA=Indirect, ashed)	<u> </u>
Counting rules	1.11
(ISO, AHERA, ASTM)	141
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
			Primary	Total	Length	Width	100	Amphibole	Ċ	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-6	M												
'	1936	ND			-		1							
	F3-6	ND			Pin	15	ATB	~80	nu	han	- 3-5%	dol	1115	
	£3-6	M							<b>y</b>					
3B	FC36	MD						1	1/1	7/12		٠, ٠		
B	44-4	ND							7	7				
	H4-4	20												
	(9144	ND		- <u>.</u>						•				
	-1.1	ND		·							`			
	E4-4	ND.												;

## Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed, mm² = # GO counted x Average GO Area (nun)

Concentration,  $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening